



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,038	10/10/2003	Airi Yamada	2185-0710P	7996

2292 7590 02/06/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

HAMILTON, CYNTHIA

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/682,038	YAMADA ET AL.	
	Examiner	Art Unit	
	Cynthia Hamilton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/28/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 4-6,8 is/are objected to.
- 8) ☒ Claim(s) 1-12 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/18/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of Group III, claims 3-12 in the reply filed on November 28, 2005 is acknowledged. Applicants made provisional election without traverse dependent upon Examiner change of position. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-2 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 is drawn to the compound according to claim 3. Claim 3 is drawn to a chemical amplification type positive resist composition comprised of a compound and a resin. The limitations of claim 8 are clearly to the resin as claim 8 references "wherein the structural unit having an acid labile group is the one derived from" which in claim 3 has said structural unit. The "compound" of claim 3 is the sulfonium acid generator. Thus, the examiner has assumed for sake of examination that applicants intended claim 8 to be drawn to the "composition" of claim 3, since there is no compound in claim 3 as described in claim 8. For this reason, the language of claim 8 is held confusing. *Correction to "composition" in claim 8 would remove this issue of clarity in the claim language.*

Art Unit: 1752

4. Claims 6 and 11 are objected to because of the following informalities: has a period at the end of line 16 on page 55 instead of at the end of claim 11 on page 56. There is no period at the end of the claim. The same problem is in claim 6. Appropriate correction is required.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itou et al (JP 11/228534 and attached English translation supplied by applicants) in view of Iwasa et al (5,691,111) as evidenced by DERWENT-ACC-NO: 1996-136264. Itou et al disclose several species of sulfonium photoacid that belong to the instant species of Formula (Ia) as set forth in instant claim 3. They are G wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$ and $z=\text{ethyl}$, $K=-O-$ with $Q_5=CF_3SO_3^-$, H wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$, $K=-O-$ and $z=\text{methyl}$ with $Q_5=CF_3SO_3^-$, O wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$, $K=-O-$ and $z=\text{ethyl}$ with $Q_5=CF_3SO_3^-$ and P wherein $n_1=0$, $n=1$, $T=H$, $p=1$, $K=-O-$ and $z=\text{methyl}$ with $Q_5=CF_3SO_3^-$. In Itou et al, see particularly [0017], [0019] and [0020]. Itou et al teach that their photoacid generators are especially suitable for use with resists to be imaged at 193 nm because of their great transparency and because they are very soluble in many of the solvents used in such systems. In Itou et al, see particularly [0022]. Itou et al does not set forth a particular photoresist material but does disclose in their abstract that the material should be a chemical amplification type resist. Further, in [0004] Itou et al in [0004-0005] references that the problem they seek to solve is that related to JP 8-27102 A of solubility

Art Unit: 1752

of the sulfonium compound used. DERWENT-ACC-NO: 1996-136264 evidences that Iwasa et al is an English language member of the same patent family as Iwasa et al. Thus, for ease of reference, the examiner uses Iwasa et al as an equivalent of JP 8-27102 A. JP 8-27102 A is not cited as a reference in this application. With respect to instant claims 3, 7 and 9, the use of any of the photosensitive resists of Iwasa et al with any of the photoacid generators of Itou et al to obtain a resist of improved solubility while maintaining transparency at 193 nm would have been prima facie obvious as taught by Itou et al. In Iwasa et al, see particularly col. 3, lines 13-23, col. 4, lines 37-46, col. 5, lines 1-10, col. 6 col. 8, Referential Example 1 and claims 1, 6 and 10-13 and 17-22.

7. Claims 3, 7- 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itou et al (JP 11/228534 and attached English translation supplied by applicants) in view of Uetani et al (2001/0014428 A1). Itou et al disclose several species of sulfonium photoacid that belong to the instant species of Formula (Ia) as set forth in instant claim 3. They are G wherein $n_1=0$, $n=1$, T=methyl, $p=1$ and $z=ethyl$, $K=-O-$ with $Q_5=CF_3SO_3^-$, H wherein $n_1=0$, $n=1$, T=methyl, $p=1$, $K=-O-$ and $z=methyl$ with $Q_5=CF_3SO_3^-$, O wherein $n_1=0$, $n=1$, T=methyl, $p=1$, $K=-O-$ and $z=ethyl$ with $Q_5=CF_3SO_3^-$ and P wherein $n_1=0$, $n=1$, T=H $p=1$, $K=-O-$ and $z=methyl$ with $Q_5=CF_3SO_3^-$. In Itou et al, see particularly [0017], [0019] and [0020]. Itou et al teach that their photoacid generators are especially suitable for use with resists to be imaged at 193 nm because of their great transparency and because they are very soluble in many of the solvents used in such systems. In Itou et al, see particularly [0022]. Itou et al does not set forth a particular photoresist material but does disclose in their abstract that the material should be a chemical amplification type resist. Such resist is taught by Uetani et al wherein photoresist polymers are

Art Unit: 1752

inclusive of acid unstable adamantyl groups and optionally butyrolactone groups and/or anhydride groups with amine quencher compounds. With respect to instant claims 3, 7- 9 and 12, the use of any of the photosensitive resists of Uetani et al with any of the photoacid generators of Itou et al to obtain a resist of improved solubility while maintaining transparency at 193 nm would have been prima facie obvious as taught by Itou et al. In Uetani et al, see particularly [0002], Summary of the Invention, [0018], [0024], [0029-0030], [0089], Examples and claims.

8. Claims 3, 7, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itou et al (JP 11/228534 and attached English translation supplied by applicants) in view of Uetani et al (20010033987 a1). Itou et al disclose several species of sulfonium photoacid that belong to the instant species of Formula (Ia) as set forth in instant claim 3. They are G wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$ and $z=\text{ethyl}$, $K=-O-$ with $Q_5=CF_3SO_3^-$, H wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$, $K=-O-$ and $z=\text{methyl}$ with $Q_5=CF_3SO_3^-$, O wherein $n_1=0$, $n=1$, $T=\text{methyl}$, $p=1$, $K=-O-$ and $z=\text{ethyl}$ with $Q_5=CF_3SO_3^-$ and P wherein $n_1=0$, $n=1$, $T=H$, $p=1$, $K=-O-$ and $z=\text{methyl}$ with $Q_5=CF_3SO_3^-$. In Itou et al, see particularly [0017], [0019] and [0020]. Itou et al teach that their photoacid generators are especially suitable for use with resists to be imaged at 193 nm because of their great transparency and because they are very soluble in many of the solvents used in such systems. In Itou et al, see particularly [0022]. Itou et al does not set forth a particular photoresist material but does disclose in their abstract that the material should be a chemical amplification type resist. Such resist is taught by Uetani et al wherein photoresist polymers are inclusive of acid unstable norbornene/anhydride polymers with amine quencher compounds. With respect to instant claims 3, 7, and 10-12, the use of any of the photosensitive resists of Uetani et al with any of the photoacid generators of Itou et al to obtain a resist of

Art Unit: 1752

improved solubility while maintaining transparency at 193 nm would have been prima facie obvious as taught by Itou et al. In Uetani et al, see particularly Abstract, [0002], Summary of the Invention, [0110], [0124-0131], Examples and claims.

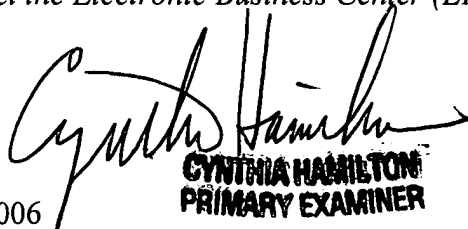
9. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kodama (2005/0019689 A1) teach similar groups on sulfonium compounds for acid formation. This reference is too new to be prior art. Boettcher (5101053) teaches polymeric sulfonium photoacid generators as do Tao (US 20030224284 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331. The examiner can normally be reached on Monday through Friday 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CYNTHIA HAMILTON
PRIMARY EXAMINER

February 5, 2006

Cynthia Hamilton
Primary Examiner
Art Unit 1752